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ABSTRACT

Although both the general public and research scientists intuitively understand the word learning, the meanings they assign to it vary. Nevertheless, there is too much concern about generalizing the meaning, and too little concern about learning context. Learning context is the internal, changing relation between individual and situation; it is the phenomenon of learning. Traditionally, research has isolated individual variables from situational variables, and has treated them externally, independent of context. Aptitude-treatment interaction research, in contrast, relates individual differences to variations in treatment. Results of different experiments will not be comparable if the context-dependent meaning of specific data on learning is not considered. (CP)

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THE CONTEXT-DEPENDENT MEANING OF LEARNING

Paper presented at the 3rd International Congress of the European Association for Research and Development in Higher Education, Klagenfurt University, Austria, January 2-6, 1979.

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ABSTRACT

The major part of research into learning has been based on conceptions of learning that mainly neglect or deny the context-dependent meaning of learning. The aim of the research has been to arrive at descriptions of phenomena of learning that provide a very general meaning to learning. The underlying assumption is that phenomena of learning constitute a homogeneous set of phenomena and/or that the eventual differences are not important in describing what is general and common. Consequently, one has interpreted data from different contexts as indications of the same general phenomena. The content of learning, the situation and the individual are seen as means of describing general learning processes.

The assumptions of homogenity and generality underlying most research into learning seems to be unjustified. This means that the context-dependent meaning of learning has to be dealt with. If the characteristics of learning is not considered in their context they will be described in a superficial way. The necessity to describe the characteristics of learning in their context depends on the fact that characteristics that seem very similar when isolated often have very different meanings. That they have different meanings means that they are differently related to other characteristics of the learning activity. Thus, if one does not consider the context-dependent meaning of learning, there is no real basis for valid descriptions of learning.

INTRODUCTION

The title of this paper suggests that the meaning of learning varies depending on the context. The context-dependent meaning of learning has mainly two sides. Firstly, the word learning has different meanings in different contexts and there is not one conception of learning, but many. Secondly, the phenomena of learning vary and the data on learning have different meanings depending on which context they appear in. The following argumentation is one for the use of contextual thinking in the study of learning. The second meaning of the title is more fundamental to this argumentation. However, since we are always confined to our conceptions we have to start with what is meant by learning and how phenomena of learning are conceptualised.

COMMONSENSE CONCEPTIONS OF LEARNING

Everybody has an experiential basis for understanding the word learning. The word is a word in our ordinary language and conceptions of learning are parts of commonsense thinking. The word learning is used when referring to a wide variety of phenomena. It is assumed to be the very character of words that they are used to refer to something which is common to a set of phenomena that may be very different in many other respects. Thus the meaning of the word learning would be equal to a concept of learning which represents an abstraction of characteristics common to all phenomena of learning. In using the word, in most cases, explicit or implicit qualifications are given by adding something about what is learned, i.e. learning to walk, learning biology etc. This does not conflict with the assumption of a common meaning of learning, if the word learning is used in each case to refer to the common meaning. However, this seems not to be the case.

In talking about learning one is, in most cases, referring to a special group of learning phenomena. In doing so one almost never uses the word learning to emphasize the characteristics of those phenomena which are common to all phenomena of learning. Rather, the meaning of the word refers to common characteristics of different groups of phenomena in different cases. This also means that the characteristics conceptualised will be different in those different cases.

In addition to differences in meaning and conception depending on the phenomena considered, there will be differences in conceptualisations of the "same" phenomena between individuals. This means that different individuals will ascribe different characteristics to the "same" phenomena of learning. It even means that individuals will delimit the phenomena of learning differently, so that it will be unclear as to what extent or in what sense they are referring to the "same" phenomena. Although it seems to be the case that all of us, when talking about learning are referring, in most cases, to a certain group of phenomena of learning we also have a strong tendency to give our conceptualisations a generalised form. In many cases we use the word learning in a way that reveals our conceptions of learning, the relation to phenomena of learning being very unclear.

We have a tendency to make second-order analyses in thinking. This means that, especially when asked about what learning is, we often tend to think of and search for a general abstract meaning of the word rather than thinking of which phenomena of learning we are referring to. However, even then, we tend to do so in a way dependent on the context, i.e. the context usually actualises certain characteristics of certain instances of learning rather than others, even if there is no explicit reference to a given subset of instances of learning. The character of general conceptions of learning is well illustrated in a most recent study by Säljö (1979). A summarizing description of the results from this study is given here to illustrate the character of conceptions of learning, as well as differences between individuals in their conceptions of learning.

The conceptions were expressed in interviews which concerned learning within educational settings. After questions about how the participants had experienced learning and about differences in learning between individuals the following question was put: "What do you actually mean by learning?". The answers to this question and follow-up questions constituted the data in the analysis referred to here. We include a rather extensive quotation from Säljö's report on the investigation.

"To summarize the empirical part of this study, it seems as if learning is defined differently by different people. Among the 90 subjects taking part in this study, five different conceptions emerged.

1. Learning as the increase of knowledge.
2. Learning as memorizing.
3. Learning as acquisition of facts, procedures, etc., which can be retained and/or utilized in practice.
4. Learning as the abstraction of meaning.
5. Learning as an interpretative process aimed at the understanding of reality.

An interesting question at this point is of course the nature of the differences between these conceptions. In view of our previous research, it is particularly interesting to relate this description to those differences regarding the process of learning described earlier. To be very brief, there seems to be at least two fundamental differences underlying the various conceptions. The first of these concerns what could be called the intentional relationship between the learner and what is to be learned. A prominent feature of especially the second conception described above is the idea that knowledge is external to individuals and that the process of learning essentially means a more or less verbatim item-by-item transfer of knowledge from an external source into the heads of the learners where it is filed. In contrast, the essence of conceptions 4 and 5 seems to lie very much in an emphasis on the assumption that knowledge is construed by individuals as a result of active effort on the part of the learner to abstract meaning from a discourse and also to relate this meaning to an outside reality.

Closely related to this distinction is the second difference which seems to underly the observed variation in conceptions of learning and that is the different assumptions regarding the nature of what is learnt, or in the words of Colaizzi[1], the learned content . As was just pointed out, conceptions 2 and 3 seem to be based on the idea that knowledge already exists 'out there' in books, lectures, etc., and, furthermore, that this knowledge is structured and divided into suitable units which can be learned exactly as they appear. In the case of conceptions 4 and 5 on the other hand, what is learned is the meaning which the learner manages to get out of the discourse. With respect to how this meaning is generated, conception 4 involves an emphasis on grasping the meaning of a learning material per se, while in conception 5 it is implied that this meaning is a result of confronting previous experiences with what is read and heard in learning situations."
(p 19)

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Colaizzi, P.E. (1973). Reflection and research in Psychology: A phenomenological study of learning. Dubuque: Kendall/Hunt.

The common use of the word learning and the differences between common-sense conceptions of learning should be a challenge to the science of learning. In attempts to develop theories of learning one would have to clarify the conceptions of learning the use of the word learning and it's relation to phenomena of learning.

CONCEPTIONS OF LEARNING IN RESEARCH

Learning has been an area of research for some time now and this research is, of course, based on one or several conceptions of learning. The very word learning expresses to some extent, through it's singular form, the thought that learning is one phenomenon (or a set of homogenous phenomena). Most studies of learning are in line with such a conception. Researchers do not seem to have felt any strong need to consider differences in conceptions of learning and differences between phenomena of learning. Instead, empirical discriptions of learning as descriptions of general characteristics of learning within one assumed common meaning of learning have been stressed.

Has, then, research succeeded in giving one common meaning to the word learning, i.e. is there one common conception of learning in research? To answer this question we shall first consider the possibility of giving one general definition of learning common to all researchers. The aim of such a definition would be to determine characteristics common to all phenomena of learning that would constitute their character of learning. We would then arrive at a common meaning of learning, at least in science, and the differences within and vagueness of common-sense thinking would vanish. It is, however, not easy to define learning. The result is as can be expected, very abstract and "empty" definitions.

In their survey of different theories of learning, Hilgard and Bower (1975) present the following "possible definition of learning".

> Learning refers to the change in a subject's behavior to a given situation brought about by his repeated experiences in that situation, provided that the behavior change cannot be explained on the basis of native response tendencies, maturation or temporary states of the subject (e.g. fatigue, drugs, etc). (p 17)

Hilgard and Bower (1975) mean that definition is not a major source of disagreement between theories of learning. However, the view of learning expressed by their definition is not shared by all researchers. For instance, the strong identification of learning with behavioral change and the stress on its dependence on repeated experiences are certainly controversial. Everything said in the definition could be questioned in the sense that there would not be any total agreement between researchers regarding the meaning of the words and statements.

It seems difficult to reach a common general description of learning at an abstract level. Even if it were possible, it would not garantee a common conception of learning and certainly not a common conceptualisation of learning phenomena. Hilgard and Bower (1975) touch upon this problem when they make the following reflection.

> Perhaps by using the common name learning to cover the aquisition of motor skills, the memorization of poem, the solving of a geometrical puzzle, and the understanding of a period in history, we are deceiving ourselves by looking for basic laws that explain processes that have little in common. We should recognize more than one kind of learning. (p 26)

Different conceptions of learning in research seem to mirror concern for different groups of instances of learning. Different researchers and learning theorists have been studying different subsets of phenomena of learning. This is usually very apparent. Still, there has been a very strong tendency to describe learning generally on the basis of a subset of instances. The tendency to give second-order descriptions of learning seems equally strong in research as in commonsense thinking. Generalisations of one perspective and of what perhaps holds for a subset of instances of learning seem to be the rule rather than an exception. There is a strong epistemological and methodological underpinning of this tendency in research.

How, then, can it be that we continually talk about learning and that research into learning can be a field of research, if there is no common concept of learning? We have an intuitive understanding of the word learning, and the concept of learning is introduced into research rather than defined. However, the intuitive understanding of learning includes the variation mentioned earlier. Attempts to give one common definition of learning do not solve the problem. Nor do attempts to describe instances of

learning in terms of characteristics of general learning processes give an explication of the appropriate meaning of learning. That we can identify and talk about instances of learning depends on our intuitive understanding of learning.

A general definition of learning can only be a first delimitation of a set of phenomena, of an area of research. This author has earlier (Svensson, 1976, 1977) emphasized the character of delimitation of general definitions of learning. Such delimitations give the most general characteristics of the perspective through which one approach reality when studying learning. The delimitation represents a starting-point for research, including some general assumptions about reality. It is useful in the sense that it gives a general frame for analysing different groups of instances of learning. However, the perspectives vary and the descriptions of the phenomena remain to be made.

Within the dominant direction of thinking there has been a focussing on generalized descriptions of change of the behavior of individuals. This focussing on the behavior and the individual and the underlying assumption of the general meaning of learning has had apparent consequences for the way of analysing and describing learning. To describe change in the behavior of an individual this change has to be inferred on the basis of interaction between the individual and the situation. Characteristics of this interaction have been used as indications of a change, as indications of learning.

Since it is assumed that the term learning denotes a homogeneous set of phenomena, only different indications of the same phenomenon in different situations are obtained and it is not necessary to pay any special interest to the differences between the indications except in a very restricted sense. The problem set is to describe learning in general with some main characteristics and variation. The learning material, the situation and even the individual are only means to describe learning in general.

Thus, there has been a view of learning that very much neglects the context-dependent meaning of both the word used in ordinary language and of the phenomena referred to. The ambition has been, on the assumption of generality, to create descriptions of learning that give the term as general a meaning as possible. However, such a general meaning of learning,

even if agreed upon by researchers, would only represent a very small part of our conceptualisations of the phenomena of learning. Further more, it would seem that the context-dependent meaning of phenomena of learning must be clarified before any general similarities between cases of learning can be given a valid assessment.

PHENOMENA OF LEARNING

Conceptions of learning are different even among, or not the least among researchers. In this sense the meaning of learning is context-dependent. But why should a student of learning be concerned about this in any other way than trying to reach a better, the best, understanding and description of learning? That there are different conceptions of learning among researchers does not in itself mean that there is not or that one could not arrive at one conception that is better. It could be said that this is what the students of learning are trying to do. In doing so they study rather restricted subsets of instances of learning. This seems to lead to different conceptions of learning (the choice of instances also seems to be dependent on the conception). This constitutes strong evidence against the way of carrying out the research if the aim is to arrive at a general meaning of learning. However, the strong context-dependency of conceptions of learning in relation to individual researchers and their subareas of research can perhaps be explained as being due to deficiencies in research and the conclusion could be that the direction towards general characteristics has not been sufficiently stressed.

The conclusion made by the present author is the exact opposite, that there is too much direct concern for the general meaning of learning and no appropriate way of dealing with the context-dependent character of the phenomena of learning. These two opposite positions will lead to quite different approaches to research on learning. In essence the interpretation of deficiencies in research depends on the conception of the phenomena. What is done here is to argue for one conception of learning and against an earlier dominating conception, stressing the generality of characteristics of learning. This seems to be a situation of persuasion rather than "proof". However the situation is not quite that bad. There is a lot of common experience and knowledge of learning held by researchers with different conceptions of learning. It is suggested here that this common knowledge, if considered, will show the meaning of pheno-

mena of learning to be context-dependent to an extent that goes far beyond the question of general differences between researchers and subareas of research.

Most basic in empirical research into learning is the identification of instances of learning. To be able to identify an instance of learning one has to have an indication or criterion of learning. Such a criterion must concern what is learned. The question of what is learned precedes the question of how it is done. However, most research into learning has not concentrated on what is learned. Somewhat simple criteria of learning like the number of point on a test after a learning session have very often been used. What the test results mean in terms of what has been learned is not the main issue in most cases. Descriptions of what is learned seem to be made "en passant". Marton (1978) argues in favour of research that finds and systematizes forms of thought in terms of which people interpret significant aspects of reality. When learning means change in forms of thought, descriptions of the kind argued for by Marton, represents the basis for descriptions of what is learned and this should be the basis for describing other aspects of learning.

It is in accordance with the common view of learning to make a distinction between individual and situation as two aspects of an instance of learning. Traditional research into learning tend to emphasize the individual side of the relation between the individual and the situation, in the sense that learning has been viewed as a change "within the individual". At the same time, there has been no understanding of the individual as the context. The individual is a context in the sense that "the same characteristic of an act", carried out by different individuals indicates different things. This is so because the individuals represent in some sense different "meaning systems". For instance, the meaning of the same amount of time used for learning something by two individuals may be very different. If it is a relatively long period of time, it may, for instance, mean rather easy but thorough learning for one and great difficulties for another individual. This meaning is given through the relation of time to other aspects of the learning activity. In a similar way, the same order in which learning material is treated (often interpreted as strategy or style of learning) will mean different things in different cases depending on how this same order depends on previous knowledge in these cases and how it is used to understand the material.

Although the individual is the most immediate context for the interpretation of data on learning the situation also constitutes a context. There has been a lot of concern for the importance of the situation in learning - even more perhaps than for learning, expecially within the tradition of experimental studies. However, the context-dependent meaning of learning in the sense that the meaning of data is dependent on the individual as a context, has not been considered in this research. In many exprimental studies of learning the phenomena of learning have not been described at all. The only results given are often some statistical differences between the situations on some measure of learning outcome. This provides only questionable possibilities for making inferences about learning.

The problems faced in research into learning and in other related fields have to some extent been recognised and solutions have been suggested on the methodology level. Cronbach (1957) distinguished between "two disciplines of scientific psychology" - correlational psychology and experimental psychology. Correlational psychology is concerned with individual differences and experimental psychology with variations between treatments or situations. The ATI-research (Aptitude Treatment Interaction) represents a bringing together of the two traditions (cf Cronbach and Snow, 1977). Also involved in this approach are suggestions aimed at improving external validity by more thorough and detailed descriptions of the characteristics of the cases investigated; i.e. by including more variables (cf Snow, 1974). Biggs (1976) used the ATI-approach within the field of student learning. He stressed that the approach means taking into consideration the possibly unique combinations of data in different situations. This way of handling the problems deals with the complexity of the phenomena within a non-conctextual approach to the meaning of data.

The problem is that if the context-dependent meaning of specific data on learning is not taken into account, the results of different experiments will not be comparable. The comparisons risk becoming superficial if the data interpreted are isolated from their immediate context. The risk is that very little of the actual similarities and differences between different experiments are revealed, which means that no basis for the integration of results is provided.

LEARNING AS THE CONTENT OF INTERNAL RELATIONS

As a starting point for further suggestions concerning the character of the context-dependent meaning of phenomena of learning, the distinction between internal and external relation is used. This distinction was made in the field of philosophy in the discussion about the concept of relation initiated by the critic of this concept by Bradley (1908). It has also been treated in detail by Moore (1922). The interpretation of relations as being internal means that they are considered to "modify" their terms. If a term A has an internal relation P then anything which had not had P would necessarily have been different from A. The interpretation of relations as external means that they do not "modify" their terms. If a term A has an external relation P then the term remains A irrespective of having or not having P. That the meaning of data on learning is context-dependent means that the relations between data on the same phenomenon of learning should be interpretated as internal relations. However, in research on learning the relations have been treated as external relations. This treatment of data will be called externalisation. It will be suggested that this is one of the main deficiencies of research into learning.

What is usually done in research into learning is to isolate different aspects such as measure of outcome, time and so on and describe each individual in the light of these aspects (variables). Although we know that these "values" only represent interdependent aspects of one activity and get their significance from their internal relations, they are externalised and treated as independent of their context. This is especially so in the use of variables as the basis for statistical group analyses.

The very treatment of "situational variables" and "individual variables" as separate independent entities is based on externalisation. The externalisation of the meaning of the independent variable is the basic idea on which most experiments are based. By checking what is true about the individuals in each experimental group in an external way and relating the externalised data thus obtained to some other externalised data about the individual one tries to find out something about the individual's learning. The result can only be descriptions of external relations. At the same time, we know that the relation between aspects of learning is an internal one, i.e. that the data represent different aspects of the same phenomenon and that they are interdependent. The most critical point is that this interdependence means that the "same externalised data" have

different internal meanings because they are part of different contexts. This means that externalisation is the same as missing the possibility of attaining significance (which is based on finding the internal relations).

The distinction between individual and situation has been used to effect a separation in the studies between variation between individuals and variation between situations. As learning is a change ascribed to the individual, although influenced by the situation, it seems natural to isolate from each other the description of the learning of the individual and the characteristics of the situation influencing this learning. In this way, the distinction between individual and situation, leads to a treatment of different aspects of the phenomena as independent entities and to externalisation of the meaning of data on those two aspects in relation to each other. Bartlett (1932) very clearly pointed out the difference between a situation and a learning situation. A learning situation must be defined in terms of the individual's activity. Thus, one cannot separate the individual and the situation when describing learning but must describe the internal relation, as it is characteristics of this relation that constitute the phenomena of learning.

The context-dependent meaning of learning cannot be described in terms of either characteristics of the individual or characteristics of the situation. Such characteristics do not represent phenomena of learning. Learning must be described in terms of the internal relation between individual and situation. The consequence of this is that the context-dependent meaning of learning manifests itself as the content of the learning activity. Content refers to the content of learning and not to the content of the situation. The focus has to be changed from general characteristics of "the learning process" to the content of learning seen as a changing relation between individual and situation.

What is suggested here is that learning is basically a change in the relation between individual and situation, that the very nature of learning concerns the content of the relation and the change, and that individual and situational aspects of learning can not be isolated and externally related if the character of learning is to be described, since the meaning of individual data and of situational data is given through the relation. Furthermore, the instances of learning are tied to individuals so that the meaning of individual data has to be interpreted on the basis

of relations between aspects of learning "within" individuals. This means that to try to find the meaning of separate data first (in an external way) and then the relation is in conflict with the character of the phenomena, the meaning of separate data has to be found through their interrelation.

The picture given here is that researchers have, in one sense, known that the data on learning has a context-dependent meaning and still have not taken this into consideration. General conceptions of science and methodology seem to have been the basis for research rather than the conceptions of the phenomena studied. The strong wish to be scientific in combination with a view of science mainly borrowed from Newtonian physics seems to have made researchers into learning adapt their view of learning (within research) to their view of scientific inquiry. Historically understandable as it is, it must now be recognised as being faulty. The proper grounds for deciding what knowledge can be reached and how within one area of research, cannot be what has been found to be appropriate within another quite different area of research, but rather what the nature of the phenomena is.

This need not lead to pessimism, but in the sense that we can not acquire knowledge in the form of general laws with few qualifications. Cronbach (1975) who, together with Meehl, introduced the concept of construct validity (Cronbach & Meehl, 1955) and initiated the ATI-research, seems to have arrived at a similar conclusion but from a somewhat different analysis of the situation. The concept of construct validity implies that a concept acquires its meaning through its relations to other concepts. These relations have mainly come to be seen as external relations based on the relating of externalised data at the empirical level. The difficulties, even through ATI-research, to establish relations in this way with a high degree of generality seem to constitute the basis for Cronbach's conclusion. However, if the data have a context-dependent meaning, the actual form of the knowledge will have to reflect this. This does not mean that we cannot develop knowledge in a "scientific" way. Rather, it means that this knowledge is somewhat different than was assumed.

What would it have been like, if biologists had mainly been concerned about what is the very essence of biological life, what constitutes the common characteristics of all living organisms. If, in order to reach this general level of description, they had mainly concerned themselves with the study of different subsets of living organisms to describe what could be said very generally about biological life. Instead they have adapted their work to their field of research and spent a lot of time in describing the characteristics of individual organisms and grouping the organisms according to the similarities and differences discovered. I suspect that many of them have done so in order to, through the knowledge of different forms of life, find out more about what is common to all living organisms. However, they have not worked as if they thought descriptions of similarities and differences between organism were of no interest or as if one were able to acquire knowledge about biological life without considering the data on individual organisms in a contextual way. The need to make a lot of descriptions of different forms of life seems to have fascinated biologists. It is always dangerous to make analogies, but if biologists have had to make a lot of detailed descriptions, considering data in their contexts, then students of learning will certainly have to do likewise.

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